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SOIL DEFENSE IN OKLAHOMA

A Bibliography of

Soil Conservation Publications

What publications are easily available?

What does each of them discuss?

Where can I get them?

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OKLAHOMA AGRICULTURAL EXPERIMENT STATION

Oklahoma A. and M. College, Stillwater

W. L. BLIZZARD, *Director* LIPPERT S. ELLIS, *Vice Director*

Experiment Station Circular No. C-97 April, 1942

How to Order Publications

Many of these bulletins can be obtained from the local county agent, or they may be ordered directly from the following sources:

Oklahoma Experiment Station Publications:

Mailing Clerk, Agricultural Experiment Station
Stillwater, Oklahoma

Oklahoma Extension Division Publications:

Mailing Clerk, Extension Division
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U. S. Department of Agriculture Publications:

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(U. S. Department of Agriculture Publications may be ordered either from the Extension Division at Stillwater, or from Washington.)

Publications may be ordered by postcard or letter. Give the number and title of each publication you can use. Be sure your name and address are written or printed legibly. Be careful to order all bulletins from the correct source.

INTRODUCTION

This bibliography is a list of bulletins pertaining to conservation problems found in Oklahoma. The list is limited to those bulletins available for free distribution or at a very small cost. It is also limited to material of practical value to the farmer or to those trying to promote a conservation program.

The purpose of the bibliography is to inform the farmer and conservation district chairman of available material on the purpose and methods of soil conservation. There has been no attempt to evaluate the material, nor does the Oklahoma Agricultural Experiment Station necessarily recommend all methods given in publications other than its own.

Out of necessity, the people of the United States have become seriously interested in erosion control and soil conservation. The government has supported this interest with subsidies for conservation practices. But even limitless funds will not produce results without the willing, informed cooperation of those who use the land. Land use practices and conservation measures will not function without day-by-day attention of the person who is making his living from the land. That such persons will be helped by this bibliography to find information useful to them is the hope of the compiler.

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Soil Defense In Oklahoma

A Bibliography of Soil Conservation Publications

Compiled by KATHRYN DRAKE
Librarian, Oklahoma Agricultural Experiment Station

SOIL CONSERVATION IN GENERAL

Conservation farming practices and flood control. H. H. Bennett. (U. S. D. A. Misc. Publication 253). 16p. Washington, 1936. "Conservation farming practices developed primarily for the prevention and control of soil erosion have given positive indications of wider usefulness. By slowing down the run-off of rain water in order to curb erosion the farmer automatically reduces the volume and velocity of water which might otherwise contribute to floods." Facts and figures as to the amount of rainfall run-off and soil loss as affected by conservation practices are given.

Conservation farming for the hard lands of the Southern Great Plains. J. S. McCorkle and Tom Dale. 27p. (U. S. Soil Conservation Service.) Washington, 1941.

Conservation farming for sandy lands of the Southern Great Plains. Tom Dale. (U. S. Soil Conservation Service.) 25p. Washington, 1941.

Conservation practices for the range lands of the Southern Great Plains. Tom Dale. (U. S. Soil Conservation Service.) 32p. Washington, 1941.

A series of three practical guides to soil and water conserving methods for farmers in the Panhandle of Oklahoma. Each bulletin gives information on how to determine the particular type of soil, and the methods of soil, crop, and farm management required for each type.

Conserving soil through the farm program. (U. S. D. A. Agricultural Adjustment Administration. SRAC-6). 9p. Washington, 1939. Questions and answers explaining the purpose and procedure of the government Agricultural Conservation Program.

Erosion and its control in Oklahoma Territory. Angus McDonald. (U. S. D. A. Misc. Publication 301.) 48p. Washington, 1938. An interesting history of erosion and its control in Western Oklahoma from early settlement to 1914.

It's no superstition . . . fire destroys. (Okla. Experiment Station Misc. Publication 2.) Poster, 12″ by 18″, for use in a campaign against grass fire.

Land facts on the Southern Plains. Glenn K. Rule. (U. S. D. A. Misc. Publication 334.) 22p. Washington, 1939. A brief description of the complex pattern of physical conditions as influenced by differences in climate and soil. Because of these differences, each farmer must cope with his own problem, for no one method will solve every soil erosion problem.

The land in flood control. (U. S. D. A. Misc. Publication 331.) 38p. Washington, 1938. "There is no longer any doubt that the uses to which we have put our land have been responsible for the silt and water which make up a flood." Improper tillage and erosion of land near the head of a stream help to cause floods hundreds of miles below.

Oklahoma handbook; 1942 Agricultural Conservation Program. (U. S. D. A. Agricultural Adjustment Administration. SRB-601-Okla.) 32p. Washington, 1941. Guide to all types of conservation which are sponsored and financed by the federal government.

Soil conservation district law for Oklahoma. Oklahoma Session laws, 1937. (Reprint.) A copy of the law passed and signed by the Governor of Oklahoma, April 15, 1937, which permits farmers to organize and form soil conservation districts which will have the statute of governmental subdivisions of the state and are for the purpose of promoting cooperation.*

Soil conservation districts for erosion control. (U. S. D. A. Misc. Publication 293). 19p. Washington, 1937. A general interpretation of the laws passed by the various states, and an explanation of the organization and operation of a soil conservation district.

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* Order from Oklahoma Soil Conservation Committee, Gardiner Hall, A. and M. College, Stillwater, Oklahoma.

Soil conservation survey handbook. E. A. Norton. (U. S. D. A. Misc. Publication 352.) 40p. Washington, 1939. Procedure for making a soil conservation survey and instructions for mapping the major physical land features essential to the development of a coordinated soil conservation program. Prepared for the trained or semi-trained soil surveyor.

Soils and security. H. H. Bennett. (U. S. Soil Conservation Service.) 25p. Washington, 1941. A brief review of the history of soil erosion and conservation followed by a discussion of the present program in the United States. The Wilson Hollow watershed near Temple, Texas, and the Pecan Creek watershed, near Muskogee, Oklahoma, are cited as examples of successful cooperative effort on the part of the farmers.

Soil defense in the South. E. M. Rowalt. (U. S. D. A. Farmers' Bulletin 1809.) 64p. Washington, 1938. The defense measures suggested and described are terracing, contour farming, strip cropping, green-manure and cover crops, pasture management for erosion control, woodland management, and wildlife plantings. One section is devoted to recommendations for Southern Oklahoma.

A soil resources program for Oklahoma. (Oklahoma Extension Circular 335.) 7p. Stillwater, Oklahoma, 1936. The soil resources program attempts to organize communities in order to "Protect, improve, and prosper with, the soil." Here is an appraisal of Oklahoma's soil resources, and a list of suggestions for improvement.

What is soil erosion? C. F. Stewart Sharpe. (U. S. D. A. Misc. Publication 286.) 84p. Washington, 1938. A clear presentation of the erosion problem, including many photographs showing the effects of erosion on the landscape.

The work of the Soil Conservation Service. M. M. Tozier. (U. S. Soil Conservation Service.) 12p. Washington, 1941. A brief survey of the entire program of soil conservation. Particularly of interest to the leader in a conservation district and those interested in promoting conservation.

Working plans for permanent farms. Glenn K. Rule. (U. S. D. A. Misc. Publication 411.) 41p. Washington, 1940. It is impossible to set down in one-two-three order the precise remedies that a farmer should employ in devel-

oping defense measures for a farm, but there are some fundamental principles that have wide-spread application. An excellent guide for the county soil conservation committees and their groups.

ECONOMIC ASPECTS OF CONSERVATION

Better harvests through conservation farming. R. E. Uhland. (U. S. Soil Conservation Service.) 10p. Washington, 1941. Presents actual results obtained in recent years through contour cultivation and terracing on farms growing cotton, wheat, beans, and sorghum in the Southwest and Southern Great Plains.

Calculated net income resulting from level terraces on Richfield silt loam soil and suggested lines of defense against wind erosion. H. A. Daniel. (Okla. Panhandle Exp. Sta. Bul. 58.) 14p. Goodwell, 1935. "The total calculated increase in income due to terracing over the adjacent unterraced land was $23.33 per acre for the ten-year period. The total expense of building the terraces and cultivating on the contour was estimated at $5.77 per acre. After deducting the total expenditure from the total income, the calculated net income was found to be $17.56 per acre or an average annual cash income of $1.75 per acre."

Conservation on small cotton-corn farms. E. A. Tucker. (Oklahoma Experiment Station. Current Farm Economics, v. 14, no. 6.) Stillwater, 1941. "How much soil and water can small cotton-corn farmers be expected to save?" The report of a study being made in East Central Oklahoma to find an answer to this question.

Summary of Pecan Creek farm business records, Muskogee County, Oklahoma, 1937-1939. E. A. Tucker. (Oklahoma Mimeo. Circ. 64.) 4p. Stillwater, 1940. An attempt to measure the effects of conservation practices on farm organization, operation, and income by means of a comparison between farms on which conservation practices have been used and other farms in the area on which such practices have not been used.

Oklahoma land ownership study: preliminary report. Randall T. Klemme. (Oklahoma Mimeo. Circ. 50.) 2p. Stillwater, 1939. A land ownership pattern map which shows the exact location within sections of four major classes of land: Privately owned, tax free, cooperatively owned, and unclassified.

CONSERVATION THROUGH CROP MANAGEMENT

The annual lespedezas as forage and soil-conserving crops. A. J. Peiters. (U. S. D. A. Circular 536.) 56p. Washington, 1939. Annual lespedezas are excellent for rotation pastures and summer grazing pastures as well as for soil conservation on worn-out row-crop fields. Best adapted to eastern Oklahoma.

Climatic conditions and suggested cropping systems for northwestern Oklahoma. H. A. Daniel and H. H. Finnell. (Oklahoma Experiment Station Circular 83.) 26p. Stillwater, 1939. Crop rotations in dry-land farming must be aimed primarily at using crops which (1) are adapted to the soil-moisture available in a particular season and (2) will maintain a vegetative cover to prevent wind erosion.

Cover crops for soil conservation. Walter V. Kell and Roland McKee. (U. S. D. A. Farmers' Bulletin 1758.) 14p. Washington, 1936. Cover crops protect and enrich the soil. A description of such cover crops as sweet clover, vetches, lespedeza sericea, wheat and others, and the method for adapting them to local conditions and needs.

Crop adjustment; Oklahoma's opportunity for soil improvement. L. W. Osborn. (Oklahoma Extension Circular 307.) 38p. Stillwater, 1934. Methods for improving soil on land retired by the Agricultural Adjustment Program include the planting of soil improving and erosion-preventing crops, pasture and meadow crops, and woodlot and shelterbelts.

Crotalaria for soil improvement. H. J. Harper and Orville Stout. (Oklahoma Experiment Station Mimeo. Circular 66.) 14p. Stillwater, 1941. Crotalaria is a drought-resistant legume, excellent for increasing the available nitrogen in depleted soils. Adaptability of varieties, methods of planting, and the companies handling seed are given here.

The economy of soil nitrogen under semiarid conditions. H. H. Finnell. (Oklahoma Experiment Station Bulletin 215.) 22p. Stillwater, 1933. Experiments indicate that the trend of topsoil nitrogen varies according to cropping practice. Topsoil nitrogen losses averaged more where wide spacing of the crop was used than where close

spacing was used. Losses also were roughly in proportion to the extent of fallowing employed. Under continuous wheat, sudan hay and closely spaced milo, the topsoil nitrogen was maintained with slight gains.

Factors affecting the accumulation of nitrate nitrogen in High Plains soils. H. H. Finnell. (Oklahoma Experiment Station Bulletin 203.) 47p. Stillwater, 1932. The main factors discussed here are the effects of cropping systems, tillage practices, and climatic factors.

Groups of plants valuable for wildlife utilization and erosion control. W. L. McAtee. (U. S. D. A. Circular 412.) 11p. Washington, 1936. Lists of plants for various types of land and wildlife.

Heavy plains soils moisture problems. H. H. Finnell. (Oklahoma Experiment Station Bulletin 193.) 8p. Stillwater, 1929. A discussion of runoff, evaporation and absorption problems of the heavy soils of the Panhandle and adjacent region. These soils are commonly known as hard land, tight land, wheat land, clay soil, or heavy soil to distinguish them from sandy or loam soils also found in this region. Eleven rules for dry farming on heavy soils are given.

Legumes in soil conservation practices. A. J. Peiters. (U. S. D. A. Leaflet 163.) 8p. Washington, 1938. A brief discussion of the uses of the more common legumes as a means of conservation.

Lespedeza sericea and other perennial lespedezas for forage and soil conservation. A. J. Peiters. (U. S. D. A. Circular 534.) 43p. Washington, 1939. Though not a competitor of alfalfa for hay, lespedeza has its place on the sour, eroded soils of low fertility level in the southeastern part of Oklahoma.

Moisture and fertility relations of subsoil variations in heavy silt loam soil at Goodwell, Oklahoma. H. H. Finnell. (Oklahoma Experiment Station Bulletin 214.) 11p. Stillwater, 1933. Experiments show that a proper ratio of crop and fallow rotation increases the amount of moisture available to crops grown on soils underlaid at a shallow depth by a whitish-colored unweathered material, as is found in most of the High Plains of Oklahoma.

Soil-depleting, soil-conserving, and soil-building crops. A. J. Peiters. (U. S. D. A. Leaflet 165.) 8p. Washington, 1938. A brief, clear explanation of these three types of crops, and examples of each.

Strip cropping for soil conservation. Walter V. Kell, and Grover F. Brown. (U. S. D. A. Farmers Bulletin 1776.) 39p. Washington, 1938, rev. "Strip cropping, combined with contour tillage and terracing, had been proven . . . to be very economical and effective, and the most practical means of controlling erosion and conserving soil and water on cultivated land." Questions as to width of strips, deviation from the contour, corrections and buffer strips are answered in this bulletin.

Summer crops for green manure and soil improvement. Roland McKee. (U. S. D. A. Farmers' Bulletin 1750.) 16p. Washington, 1935. The summer crops most commonly used for green manure are alfalfa, red clover, soybeans, cowpeas, velvet beans, sweet-clover, crotalaria, and lespedeza. Gives the most economical method for use of such crops.

Sweet clover for soil improvement. H. J. Harper. (Oklahoma Experiment Station Circular 94.) 31p. Stillwater, 1941. "Sweet clover is one of the most valuable legumes which can be grown in Oklahoma to increase the nitrogen and organic matter content of cultivated land . . . which has decreased at the average rate of approximately one percent per year as a result of the production of soil depleting crops and losses from soil erosion." Answers the questions, why, where and when to plant sweet clover.

The utilization of moisture on heavy soils of the Southern Great Plains. H. H. Finnell. (Oklahoma Experiment Station Bulletin 190.) 24p. Stillwater, 1929. In view of the fact that only about 20.7 percent of total rainfall becomes soil moisture, "it is popularly felt that much of the difficulty of handling moisture in heavy soils would be overcome if methods of culture could be devised which would enable a quicker penetration of moisture into the topsoil to avoid a portion of the great surface evaporation loss." A study of this problem reported here shows briefly "that while the object sought is soundly needed little can be done in a practical way to meet this require-

ment aside from contour tillage to prevent runoff and maintenance of organic matter to promote ready absorption."*

Winter legumes for green manure in the cotton belt. Roland McKee and A. D. McNair. (U. S. D. A. Farmers' Bulletin 1663.) 21p. Washington, 1931. Price 5¢. For sale only.** Winter legumes include those with the ability to survive a temperature ranging from 60° to 15° F. or lower and which make more or less growth during this period. In a strict sense "green manure" means a crop turned into the soil green or in an immature state for the purpose of soil improvement. Information is given on the selection and production of such soil improving crops.

CONSERVATION THROUGH TERRACING AND OTHER ENGINEERING MEANS

Baffles for terrace outlet control. W. H. McPheters. (Oklahoma Extension Circular 328.) 15p. Stillwater, 1937. rev. ed. Use, importance and proper location of baffles placed in the terrace outlet-ditch to protect the ditch.

Erosion on roads and adjacent lands. Arnold M. Davis. (U. S. D. A. Leaflet 164.) 8p. Washington, 1938. Means of preventing and controlling roadside erosion to be applied by cooperative effort of farmer and highway officials.

The farm pond. W. H. McPheters. (Oklahoma Extension Circular 175.) 8p. Stillwater, 1926. Methods for location and construction of farm ponds, mainly for use in watering livestock, but useful also for conservation.

How to make and use a McPheters terracer. W. H. McPheters. (Oklahoma Extension Circular 340.) 15p. Stillwater, 1937. Discussion of a new terracer versus old type V-drag. Size of terracer, tools needed, bills of material, making the terracer, and how to build terraces.

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* Research work designed to determine the best methods of conserving soil and moisture in the wheat-growing areas of western Oklahoma and Kansas was started at Cherokee, Okla., in 1939 by the U. S. Soil Conservation Service and the Oklahoma Agricultural Experiment Station, cooperating. At the time this bibliography was prepared, the work at Cherokee had not progressed far enough to warrant publication of results; but information from this source should be available within another year or two.

** Order from Supt. of Documents, Washington, D. C. Stamps not accepted.

The Missouri soil saving dam. J. C. Wooley, W. M. Clark, and R. P. Beasley. (Missouri Experiment Station Bulletin 434.) 23p. Columbia, Mo., 1941. Description and working plans for the construction of a low-cost dam for use in farm plans for water management.

Plowing for terrace maintenance in the South. John M. Downing and Philip M. Price. (U. S. Soil Conservation Service.) 10p. Washington, 1940. Methods of field preparation which minimize the cost and time of terrace maintenance are discussed and well illustrated by pictures of actual work.

Terrace construction with small equipment in the South. W. A. Weld and P. M. Price. (U. S. Soil Conservation Service.) 11p. Washington, 1940. Terse and well illustrated description of methods for terracing at very little cost with plow and scraper, plow and V-drag, one-way disk tiller, or small-blade terracer, when the time and labor elements are not important.

Terracing for soil and water conservation. C. L. Hamilton. (U. S. D. A. Farmers Bulletin 1789.) 59p. Washington, 1938. Compilation of valuable information on terrace construction and its coordination with other recommended soil conservation practices.

Terracing in Oklahoma. G. E. Martin. (Oklahoma Extension Circular 218.) 19p. Stillwater, 1927. Practical guide to terrace construction, including a description of necessary equipment and a discussion of the benefits to land owners and operators.

Terrace outlets and farm drainageways. C. L. Hamilton. (U. S. D. A. Farmers' Bulletin 1814.) 45p. Washington, 1939. A compilation of the best information now available for farmers in the construction and use of terrace outlets and the protection, improvement, and maintenance of other sloping drainageways.

Terracing to control erosion; a profitable farm practice. Hal F. Eier and H. E. Stover. (Kansas Extension Bulletin 70.) 44p. Manhattan, Kansas, 1938 rev. ed. "Loss of fertility, failure to adhere to a soil-management schedule, and mis-management of rolling farm lands leads rapidly to an erosion control problem . . . Terracing prevents the accumulation of miniature streams from

flowing down the slopes and handles as individual problems the drainage from small watersheds." The equipment necessary and the construction of terraces are discussed and illustrated.

GULLY CONTROL

Prevention and control of gullies. H. G. Jepson. (U. S. D. A. Farmers' Bulletin 1813.) 60p. Washington, 1939. Instructions for the following gully control measures: contour farming; proper vegetation; structures, such as dams, flumes, and culvert drop inlets; and bank protection on small streams by jetties and vegetation, cribbing or riprap, and channel straightening.

RANGE CONSERVATION

The effects of burning pasture and woodland vegetation. H. M. Elwell, H. A. Daniel, and F. A. Fenton. (Oklahoma Experiment Station Bulletin 247.) 14p. Stillwater, 1941. "Nature's first line of defense against soil erosion is the vegetation which covers the earth. Wanton burning of this vegetation is one of the enemies in the battle to prevent soil, water, and fertility losses." The answer to how burning affects vegetation, soil fertility, and injurious insects.

Grass culture and range improvement in the Central and Southern Great Plains. G. A. Savage. (U. S. D. A. Circular 491.) 56p. Washington, 1939. How pasture grasses may be reestablished on cultivated land and how grasses may be restored and maintained on depleted pastures.

Methods of reestablishing buffalo grass on cultivated land in the great plains. G. A. Savage. (U. S. D. A. Circular 328.) 20p. Washington, 1934. The time required for buffalo grass to renew its original virgin condition on abandoned farm land ranges from 20 to 50 years. It is not practical to establish it by seeding. By broadcasting or setting small pieces of sod at intervals of 3 or 4 feet, the grass has been completely reestablished at the end of the third or fourth season.

Native and adapted grasses for conservation of soil moisture in the Great Plains and Western States. M. M. Hoover. (U. S. D. A. Farmers Bulletin 1812.) 43p.

Washington, 1939. Information on how to select from the more common species of grasses some one or more species suited to the needs of a particular farm.

A pasture handbook. A. T. Semple, H. N. Vinall, C. R. Enlow, and T. E. Woodward. (U. S. D. A. Misc. Publication 194.) 89p. Washington, 1934. A general survey of problems on permanent, supplemental and annual pasture.

Progress report of land reclamation and pasture investigations on abandoned and scrubby oak areas in Central Oklahoma. Harry M. Elwell. (Okla. Mimeo. Circular 65.) 9p. Stillwater, 1941. The results of a field experiment on 110 acres of scrubby oak and abandoned land near Guthrie, Oklahoma, indicate that such land can be successfully transformed to a profitable basis of operation as livestock pastures.

Range conservation practices for the Great Plains. B. W. Allred. (U. S. D. A. Misc. Publication 410.) 20p. Washington, 1940. How to control range deterioration by proper fencing, stocking, herding, and watering; system of grazing; choice of suitable livestock, and distribution of livestock.

Stock-water developments; wells, springs, and ponds. C. L. Hamilton and Hans G. Jepson. (U. S. D. A. Farmers Bulletin 1859.) 70p. Washington, 1940. Instructions for construction of wells, troughs, tanks, wells, springs, and reservoirs based on field experience of experienced stockmen and technicians. "The need for effective utilization of grazing areas and scarcity of stock water have led to unprecedented activity in the development of water supplies during the last few years as a part of conservation practices in range and pasture areas."

The use of bluegrass sod in the control of soil erosion. R. E. Uhland. (U. S. D. A. Farmers' Bulletin 1760.) 12p. Washington, 1936. Bluegrass sod has been used satisfactorily to control gullies in Missouri and should be adaptable to eastern Oklahoma.

Western grass. (U. S. D. A. A. A. A. G-98.) 15p. Washington, 1940. "The productivity of the range and the security of the western livestock industry is of vital importance to the West, the Midwest, the South, the East,

and the Nation." Deferred grazing, artificial reseeding, contour furrowing, tanks and reservoirs, and elimination of destructive plants are recommended to keep the range in a productive condition.

WIND EROSION CONTROL

Crops against the wind on the Southern Great Plains. Glenn K. Rule. (U. S. D. A. Farmers' Bulletin 1833.) 73p. Washington, 1939. A brief review of the circumstances which have created the soil problems in the southern Great Plains and the part man has played in hastening recent troubles, in addition to information on the methods now being used to solve the problem on nature's own terms.

Emergency wind-erosion control. Glenn K. Rule. (U. S. D. A. Circular 430.) 10p. Washington, 1937. Answers two questions: (1) What can be done to provide protection for the soil during the winter and prior to the time when the winds blow in the spring? (2) What can be done when the blow period has arrived?

Preventing soil blowing on the Southern Great Plains. E. F. Chilcott. (U. S. D. A. Farmers' Bulletin 1771.) 28p. Washington, 1937. An explanation of the use and an evaluation of the various implements useful in preventing soil blowing, in addition to a discussion on the cultivation for winter wheat and corn on strip cropping, shelterbelts, and regrassing. "The best preventive and control of soil blowing on cultivated land consists in keeping on the surface materials such as crops, crop residues, or clods, that resist soil movement."

Sand-dune reclamation in the Southern Great Plains. Charles J. Whitefield. (U. S. D. A. Farmers' Bulletin 1825.) 13p. Washington, 1939. Written for the benefit of those farmers and ranchers who are faced with the problem of protecting their lands against possible damage from dune formation or with the more immediate problem of restoring lands that have been made temporarily useless by wind-blown piles of sand.

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